

Claims

1. A device for controlling a behavior of a vehicle having a vehicle body, wheels and a steering apparatus being able to steer a wheel independently of a driver's steering operation, the device comprising a portion of calculating a provisional target steering angle for wheels based upon an amount of an operation of a driver and a predetermined steering characteristic; a detector of detecting an actual value of a turning state parameter; a portion of calculating a target value for the turning state parameter; a portion of calculating a target steering angle for wheels for reducing a magnitude of a deviation of the actual turning state parameter from its target value when the magnitude of the deviation is at a reference value or above; and a portion of controlling a steering angle based upon the target steering angle; and wherein, during execution of controlling the steering angle based upon the target steering angle, the target turning state parameter calculating portion calculates the target value of the turning state parameter based upon the provisional target steering angle.

2. A device according to claim 1, wherein, when the magnitude of the deviation of the turning state parameter is lower than the reference value, the steering angle controlling portion controls the steering angle of wheels through the steering apparatus based upon the provisional target steering angle.

3. A device according to claim 1 or 2, further comprising a detector of detecting an actual steering angle of wheels, wherein the target turning state parameter calculating portion calculates the target value of the turning state parameter based upon the actual steering angle when no steering control of wheels based upon the target steering angle is executed.

4. A device according to claim 1, 2 or 3, wherein the provisional target steering angle is a sum of a steering angle of wheels corresponding to the amount of the operation of the driver and a control steering angle for accomplishing a predetermined steering characteristic.

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5. A device according to claim 1, further comprising a portion of controlling braking and driving forces on the respective wheels; a portion of calculating a total target amount of a stability control based upon the turning state parameter deviation for reducing the magnitude thereof; a portion of dividing the total target stability control amount into target stability control amounts each for steering control of wheels and braking and driving force control at a predetermined ratio; and wherein the target steering angle calculating portion calculates the target steering angle based upon the target stability control amount of steering control of wheels; the steering angle controlling portion controls the steering angle of wheels based upon the target steering angle through the steering apparatus; and the braking and driving force controlling portion controls braking and driving forces on the respective wheels based upon the corresponding target values calculated based upon the target stability control amount of braking and driving force control.

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6. A device according to claim 5, further comprising a detector of detecting an actual steering angle of wheels; wherein, when the steering apparatus can not steer the wheels independently of a driver's steering operation, the target turning state parameter calculating portion calculates the target turning state parameter based upon the actual steering angle and the dividing portion assigns the total target stability control amount only to the target stability control amount for braking and driving force control.

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7. A device according to claim 6, wherein, when the steering

apparatus becomes disabled from steering the wheels independently of a driver's steering operation during the calculation of the target turning state parameter based upon the provisional target steering angle in the target turning state parameter calculating portion, the variation in the turning state parameter owing to the change of the steering angle used in calculating the target turning state parameter from the provisional target steering angle to the actual steering angle is reduced.

8. A device according to claim 7, wherein a degree of the reduction of the variation in the turning state parameter is larger at a higher vehicle speed than at a lower vehicle speed.